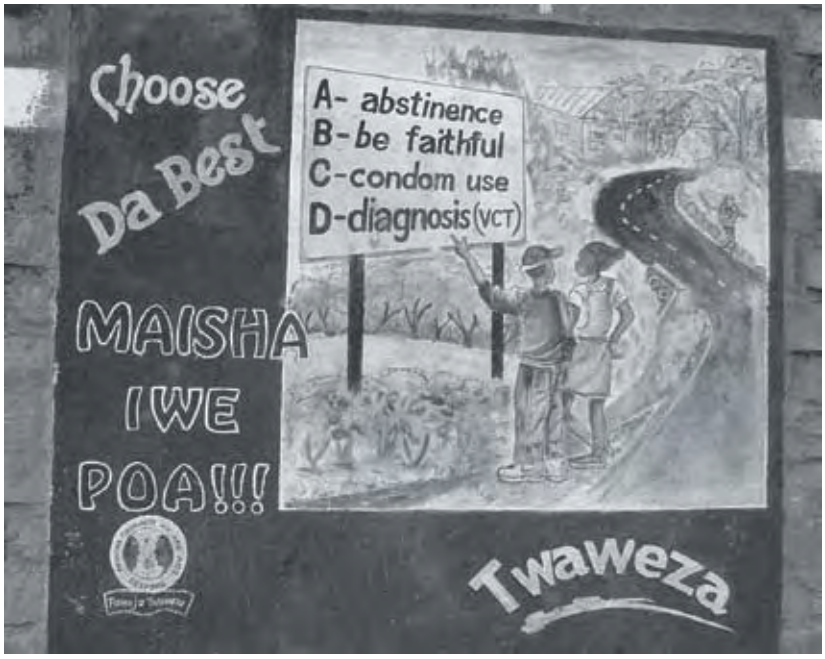
Horizons Report
HIV/AIDS OPERATIONS RESEARCH
December 2005



HHI/IMPACT

Billboards, such as this one in Kenya, promote HIV prevention messages as part of a comprehensive prevention strategy. The billboard also exclaims, "Life will be great!!!" and "We can do it."

Refocusing on HIV Prevention

Operations research in Kenya and South Africa targets key populations

In 2005 AIDS claimed another 3 million lives, and it relentlessly threatens millions more. Despite global and national efforts to quell the pandemic, 40.3 million people are currently living with HIV—the highest level ever. Nearly 5 million new cases occur each year, with almost every region of the world reporting increasing numbers.

Yet amid the grim statistics there are some encouraging signs. Although far below the World Health Organization's target goal of reaching 3 million people by 2005, about one million people in low- to middle-income countries are receiving antiretroviral therapy, which has prevented an estimated 250,000 to 300,000 deaths this year. Further, a few countries, including Kenya and Zimbabwe, were able to lower their HIV prevalence rates through a heavy investment in prevention programs.[1]

Despite recent attention directed to issues surrounding treatment, it is critical to remember the role that prevention plays in the fight against AIDS. Over the past several months UNAIDS Executive Director Peter Piot has encouraged a refocus on prevention, stating that "reaching or sustaining universal HIV treatment will be impossible without effective HIV prevention"[2] and urging "a rapid increase in the scale and scope of prevention programmes."[3]

Experts calculate that comprehensive efforts that focus on both prevention and treatment could avert more than half of the new HIV infections that would otherwise occur through the year 2020 in sub-Saharan Africa, the region most affected globally by AIDS.[4] This issue of *Horizons Report* highlights findings from operations research that examines prevention issues and strategies for key vulnerable populations. These findings have important program and policy implications for catalyzing a renewed commitment to HIV prevention in Africa and elsewhere.

References on back page

Refocusing on HIV Prevention

Inside:

Prevention for Positives
Page 2

Reaching Men Who Have Sex With Men
Page 5

Delivering ABC Messages
Page 9

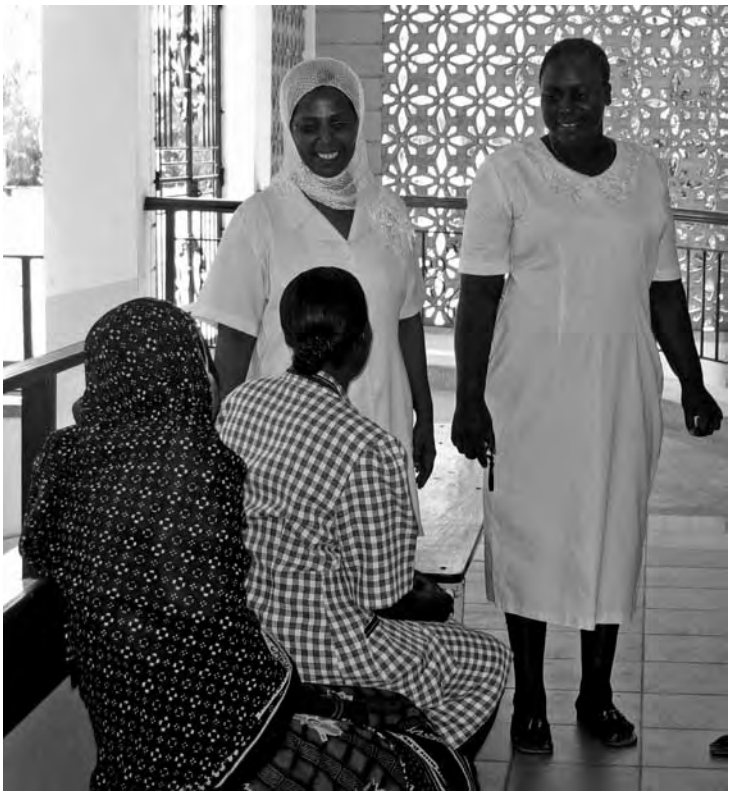
Targeting Miners and Sex Workers
Page 13

The Population Council implements the Horizons Program in collaboration with the International Center for Research on Women, the International HIV/AIDS Alliance, PATH, Tulane University, Family Health International, and Johns Hopkins University.

Prevention for Positives

Study in Kenya underscores need to include people living with HIV/AIDS in prevention efforts

A comprehensive approach to prevention requires that HIV-positive persons do not fall outside the scope of prevention efforts. Instead, these individuals need to take protective and preventive measures since they run the risk of both infecting their sexual partners and reinfecting themselves with different strains of the virus.



AVINA SARNA

Nurses at the Mkomani BOMU clinic, a study site which offers HIV treatment, speak with two patients.

As access to treatment expands, many HIV-positive people on antiretroviral therapy (ART) are living longer, healthier, and more sexually active lives. Those results, while encouraging, raise new concerns within the public health community. Do HIV-positive persons receiving ART engage in more risky sexual behaviors after feeling better in response to the therapy? Even if unsafe behaviors do not increase after treatment, do patients on ART continue to have unprotected sex with their partners?

To examine the impact of ART on sexual risk behavior in a developing country setting, researchers from the Horizons Program, the International Center for Reproductive Health, and implementation partners from Kenya Ministry of Health facilities conducted a study in Mombasa. In addition to documenting the changes in sexual behavior among people on ART over a 12-month period, the study compares the sexual risk behaviors of HIV-infected individuals receiving ART to those of HIV-infected individuals on preventive therapy. This comparison is revealing since both groups are in regular contact with health workers and thus exposed to similar HIV/AIDS messages.

Researchers interviewed 179 HIV-infected persons who had been receiving ART for six months and 143 HIV-infected persons who had been receiving opportunistic infection prophylaxis, or preventive therapy, for at least five months. The patients were recruited as they came in for routine follow-up services at four HIV care clinics in Mombasa: Coast Province General Hospital, Mkomani BOMU clinic, Magongo clinic, and Port Reitz District Hospital. Both groups received free treatment from these facilities.

After providing written informed consent, the patients answered questions on their sexual behavior over the past six months in their choice of English or Kiswahili. The questions asked about their type of partners, knowledge of their partners' HIV status, disclosure of their own HIV status to partners, condom use at last sex, and consistent condom use.

All patients were in regular contact with health workers at the facilities where they received routine medical care on a monthly basis. The clients on ART also received additional intensive counsel-

ing on treatment adherence. Although this counseling included some mention of sexual behavior, it was not emphasized or discussed in detail.

More than half (60 percent) of the study participants were female and almost half (47 percent) were married. The average age was 37 years. The sample was fairly well educated; 40 percent had up to 12 years of schooling and another 43 percent had attended up to seven years of school. Patients receiving preventive therapy were significantly more likely to be employed and have a higher economic status than patients on ART.

Sexual Activity

The study found that there was no difference between the groups as to whether respondents were sexually active in the last six months. But ART patients were less likely than patients on preventive therapy to report having casual or multiple partners.

Less than half of all patients on ART and those receiving preventive therapy reported having sex during the past six months. There was little difference between men and women, although married respondents were more likely to report having sex than single, widowed, or separated respondents.

Among respondents who were sexually active, more than nine out of ten (92 percent) reported having sex with a regular partner. The patients receiving ART were more likely to report having sex with a regular partner compared to those receiving preventive therapy (97 vs. 88 percent). ART recipients were less likely to report having sex with a casual partner (3 vs. 23 percent) and with multiple partners (1 vs. 13 percent) than those receiving preventive therapy.

The study provided no evidence that sexual risk behavior is higher among patients on antiretroviral therapy.

Condom Use

Condom use is an effective means of lowering the risk of HIV transmission for people living with HIV/AIDS who are sexually active. Patients on ART were more likely to report condom use at last sex (93 vs. 77 percent) and consistent condom use with their regular partners (53 vs. 22 percent) during the past six months compared to those on preventive therapy.

Since most survey participants reported having sex with a regular partner, researchers explored the factors influencing condom use with these partners. For this investigation, unprotected sexual intercourse was defined as no condom use at last sex or inconsistent condom use with regular partners during the last six months.

The multivariate analysis found that males, married respondents, and those on preventive therapy were significantly more likely to report having unprotected sex with a regular partner. More specifically, patients receiving preventive therapy were four times more likely to report having unprotected sex with a regular partner compared to patients receiving ART. Married or cohabiting patients were three times more likely to report having unprotected sex compared to single (never married, widowed, or separated) respondents.

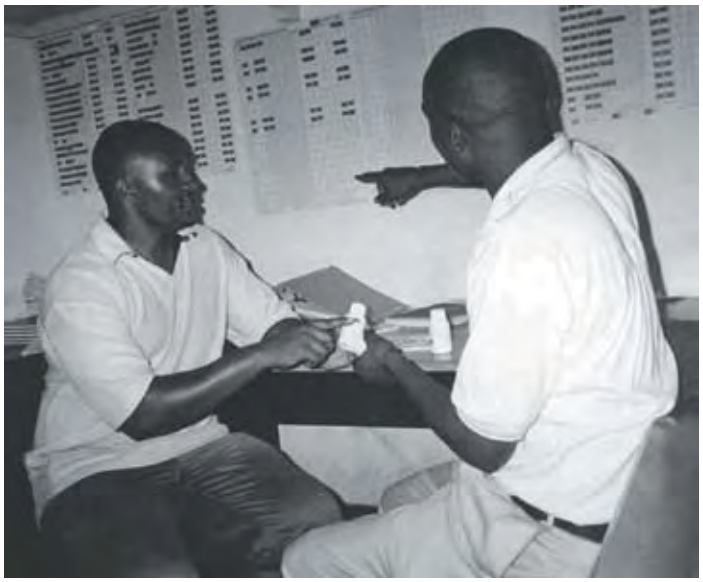
In-depth interviews with respondents provided insight into the barriers to condom use for married or cohabiting respondents. As one 34-year-old male patient on ART with an HIV-negative spouse explained in response to a question on using condoms, "To tell you the truth it is not easy to use a condom especially using it on your wife, how do I go to shops to buy a condom and use it on my wife, I would rather not have sex…. There was a day that I used a condom after a long time without having sex and it broke…since that day my wife told me she will never use a condom…. She said if it is a matter of infecting her then it would have long ago happened…she said we would rather both of us die...." He added, "…besides she kept on asking me how we would get a child if we keep on using the condom."

Disclosure of HIV Status

Ensuring the prevention of HIV transmission requires a range of protective measures, including knowledge of partners' HIV status and disclosure of one's serostatus to sexual partners. However, in both the ART group and the preventive therapy group, around 40 percent of the sample did not know their regular partners' HIV status. Additionally, about 20 percent did not disclose their own serostatus to their regular partners.

The findings about disclosure to casual partners and sex workers were also of concern. Among the

individuals who reported having sex with a casual partner, the majority did not know the HIV status of these partners (11/17), and did not disclose their own HIV status to these partners (12/17). Almost a third (5/17) reported not using a condom at last sex with a casual partner. One respondent from each group (one male and one female) reported having sex with a sex worker during the last six months; neither disclosed his or her own status to these partners or used a condom.



PAUL MUNYAO

Jerry Okal (left), the study's key research assistant, with a community health worker who counsels ART patients on adherence.

Implications

This study found lower levels of sexual risk behavior (such as multiple partners, sex with casual partners, and inconsistent condom use) among people living with HIV/AIDS who were receiving ART compared to those receiving preventive therapy. Thus, the study provided no evidence to suggest that sexual risk behavior is higher among patients on ART.

Although levels of self-reported risk behavior were lower among patients receiving ART, a considerable risk of HIV transmission still exists for both groups. This may be especially true when considering that the study relied on self-reported sexual behavior, which may have been underestimated. Lack of knowledge of partners' HIV status and low levels of disclosure of one's own status, coupled with inconsistent condom use, sets the stage for HIV transmission, especially within regular partner relationships. Transmission of resistant viral strains and reinfection with new strains are potential public health risks. Further, unprotected sex carries the added risks of unwanted pregnancy and HIV transmission to the child.

"Traditionally, the focus of prevention programs has been on groups with multiple partners…this study highlights the need for a greater focus on regular partner relationships of HIV-positive persons," explained Dr. Avina Sarna of Horizons/Population Council, one of the study's principal investigators.

Most counseling in HIV care services is directed toward treatment adherence. The patients on ART in this study received at least three preparatory counseling sessions on adherence, followed by ongoing support. Additionally, patients receiving ART have advanced HIV disease and may perceive the seriousness of their illness differently than those on preventive therapy, possibly resulting in less risky sexual behavior.

Nevertheless, HIV care services need to include prevention messages that emphasize disclosure of HIV status, partner testing, and consistent condom use with all partners, irrespective of partner status, with a special focus on regular partner relationships. "Health workers in ART treatment programs tend to spend a lot of time on issues related to medications and side effects and very little time on prevention. Clearly, preventive behavior needs a larger share of counseling time," stressed Dr. Sarna.

Horizons and its partners are currently following a cohort of HIV-infected patients receiving ART to examine changes in their sexual risk behavior over a 12-month period. Results of this research will be available in early 2006. In addition, based on findings from the study in Mombasa, plans are underway for additional research that will test different strategies, such as couple counseling and development of a personal risk reduction plan for positive prevention.

This article was written by Hena Khan, in conjunction with members of the research team, which includes Avina Sarna and Susan Kaai of Horizons/Population Council and Stanley Luchters of the International Centre for Reproductive Health.

For more information about this study, contact Avina Sarna (asarna@pcindia.org) or go to www.popcouncil.org/horizons for updates on this research.

Reaching Out to the Vulnerable

Kenya study focuses on HIV prevention needs of men who have sex with men

For HIV prevention efforts to make gains in halting the AIDS pandemic, access to information and services, such as voluntary counseling and testing (VCT) and treatment for sexually transmitted infections (STIs), must become a reality for everyone, particularly those most affected by the disease. However, the fact remains that some populations are difficult to reach through conventional health programs. According to the Office of the United States Global AIDS Coordinator, men who have sex with men are "among those who are most marginalized in society and have the least access to basic health care."[1]

Stigma and discrimination often play an insidious role in inhibiting vulnerable populations, including men who have sex with men, from gaining access to vital information and critical prevention and treatment services. This is evident in much of the developing world—and in Africa in particular—where the stigmatization of homosexual behavior and the denial of the existence of men who have sex with men persists.

Unfortunately, the health implications of ignoring men who have sex with men and excluding them from prevention programs are far reaching. A Horizons study of men who have sex with men in Senegal found that many engage in high-risk sexual behaviors, such as having multiple partners and unprotected sex, in the absence of counseling and prevention services geared toward them. Add to this poor knowledge of STIs and a high rate of symptoms, and the situation is ripe for the widespread transmission of HIV.[2]

Ignoring men who have sex with men and excluding them from prevention programs has enormous health implications.

ORIGINAL PHOTO: SCOTT GEIBEL

Despite increasing awareness of the role men who have sex with men may play in the dynamics of HIV transmission in Africa, research that can help policymakers and program managers address the issue has been limited. To better understand the HIV/STI risks and prevention needs of men who have sex with men in Kenya, researchers from the Institute of African Studies at the University of Nairobi and the Horizons and FRONTIERS programs of the Population Council conducted a study from 2003 to 2004 in Nairobi. The study is groundbreaking because it collected quantitative and qualitative information on stigma, health-seeking behavior, sexual behavior, condom use, STI symptoms, and HIV testing from an unacknowledged, yet vulnerable population in order to develop appropriate interventions to meet serious health needs.

The study included a survey of 500 men who have sex with men; in-depth inter-

views with a sample of these men, gatekeepers and service providers; and observations. Researchers used the snowball method of sampling for the survey, in which two "mobilizers" were identified and asked to recruit respondents, who subsequently recruited others.

Stigma, Discrimination, and Health-seeking Behavior

Most of the survey respondents, who ranged in age from 18 to 55 and represented a wide variety of occupations, felt that stigma and discrimination were major problems in their lives, with many feeling rejected and hated by the general society. A third experienced humiliation, harassment, or discrimination in the past 12 months, while one in five respondents were victims of some form of violence (see Table 1).

In-depth interview informants noted that stigma, discrimination, and violence often lead men who have sex with men to go to great lengths to hide their sexual identities from the public. In some cases they have relationships with women, including marriage, which helps conceal the fact that they are sexually active with men. Over a third of the men surveyed had not discussed their sexual orientation with another person, including family members. A majority (68 percent) of the men stated that they were uncomfortable discussing their sexual practices with anyone other than a male sexual partner.

This caution carries over to health care-seeking behavior—only 5 percent of survey respondents reported discussing their sexual conduct with health care personnel. Instead, the men in the study largely turn to each other and develop strong personal networks for emotional, social, and professional support and health information, including discussions related to stigma and HIV/STI prevention.

Victims of violence were more than twice as likely not to use condoms at last sex.

Sexual Risk Behavior and Condoms

Sex with multiple partners among men in the study is common. Almost half of survey respondents reported having two or more partners within the past month, while 79 percent reported the same within the past year. Although the average number of partners in the past year was three, this does not account for the 30 percent of the sample that could not remember the actual number of

Table 1 What percentage of men who have sex with men experienced stigma, discrimination, and violence?*

	Percentage (n = 500)
Forms of stigma/discrimination experienced (any form)	**33**
Aggression and/or humiliation in public	26
Alienation/harassment by family/friends/neighbors	8
Discrimination in the work place	6
Refusal of service	3
Eviction/expulsion from place of residence	1
Other	2
Forms of violence experienced (any form)	**22**
Verbal	14
Physical	12
Sexual	5
Other	4

Note: Percentages do not add to 100 percent, because of multiple responses.
*In the past 12 months.

partners they had. However, there was a substantial subgroup (21 percent) that reported having only one partner in the previous year.

Condoms are widely available in Nairobi, and their use is high among the study sample. Three out of four men surveyed reported using a condom at last anal sex and 58 percent indicated "always" using condoms. Eleven percent cited never using a condom. But survey respondents also reported widespread use of oil-based lubricants, primarily Vaseline, which can make condoms vulnerable to breakage. Only one out of five men in the survey knew that only water-based lubricants should be used with latex condoms.

Further analysis of the survey data revealed that having only one sexual partner in the past year was significantly associated with having unprotected sex. About half of the sample who did not use a condom at last anal sex said it was because they trusted their partner. In addition, victims of some form of violence over the past year were found to be more than twice as likely not to use a condom at last sex. This finding may reflect that these individuals, because of experiences of abuse, feel less empowered to negotiate condom use than other men.

"The results of this study will go a long way in challenging local notions of sexuality and sexual practices...."

STI Symptoms and HIV Testing

Even though condom use is reportedly high, the study sample described a higher level of STI symptoms than found among men in the general population of Nairobi. For example, 6 percent of men in the study reported that they had experienced genital or anal discharge in the past 12 months, compared to one percent of all males surveyed in Nairobi, according to the 2003 Kenya Demographic Health Survey.[3]

Eight out of ten men surveyed with STI symptoms in the past 12 months sought treatment, with the majority choosing to go to private clinics. In-depth interviews revealed privacy and confidentiality as primary reasons why private clinics were chosen over other available health facilities.

More than half of the men surveyed (57 percent) had been tested for HIV. This is more than twice the proportion of the general male population in Nairobi Province who had been tested.[4] Almost all (98 percent) of those who underwent HIV testing received their results, and 70 percent were tested within the last year. Of those not tested for HIV, 95 percent knew where they could go for VCT.

The high utilization of testing services by men who have sex with men is a missed opportunity to impart HIV prevention messages geared toward them. The researchers found that the curriculum used to train VCT counselors in Nairobi does not include specialized advice for men who have sex with men or address particular issues of partner notification and couples' testing for this population. Most providers assume that all clients are heterosexual, and therefore do not offer information that may be of particular interest to men who have sex with men, such as which lubricants should be used with condoms for HIV prevention.

Health Services

Men in the study both desire and seek professional health care from the variety of medical facilities available throughout Nairobi. Still, they cite difficulty finding providers trained to meet their specific sexual health needs. As indicated earlier, respondents report confidentiality as a chief concern in selecting a health facility for STI treatment, fearing the reaction of the health provider to their sexual practices as well as possible legal action since homosexual behavior is illegal in Kenya.

In-depth interviews with service providers revealed that the issue of male-to-male sexual behavior is rarely discussed among providers, or with their patients. This is despite the fact that providers are aware of symptoms that indicate a male patient is having sex with other men, such as anal sores or ulcers in the throat. Since such patients usually do not ask for specific advice, or discuss their symptoms, providers in turn offer treatment without question or inquiry, creating another missed opportunity for HIV prevention counseling.

"The results of this study will go a long way in challenging local notions of sexuality and sexual practices in the era of HIV/AIDS, particularly among health providers, and hopefully lead to more comprehensive counselling" said W. On-

yango-Ouma of the Institute of African Studies/University of Nairobi, one of the study's principal investigators.

HIV Prevention Recommendations

The study highlights a number of positive findings—most respondents are aware of HIV and STI risks and are taking certain steps to protect their health. "Reported condom use was high, and about 20 percent of those surveyed were in monogamous relationships over the past year," summarized study investigator Scott Geibel of Horizons/Population Council. "This was of course the good news, but at the same time this doesn't mean health programs are off the hook. Men who have sex with men in Nairobi still need correct information on water-based lubricants, and the high level of multiple-partner sexual activity remains a concern," he added. Moreover, the high prevalence of STI symptoms in the study sample may facilitate the transmission of HIV.

"Given that stigma and discrimination are clearly barriers to men who have sex with men seeking and obtaining appropriate prevention information and health care, this will all be challenging. My sense from health care providers, however, when I discuss our results with them, is that the report has opened many eyes, and that our recommendations are being seriously considered," maintained Geibel.

The study also found that men—whether partners or friends—rely on each other to share information about HIV and other STIs. And respondents who had attended a discussion group or session on HIV/STIs were more likely to use condoms. A high proportion of respondents said they would seek advice regarding STI symptoms from other men, which supports the notion of training representatives of this population as HIV/STI peer educators.

These peer educators could be trained to encourage the use of condoms for any penetrative sex act with male or female partners, the use of water-based lubricants when using condoms, and a reduction in the number of sexual partners. Peer educators could also help men explore the issues of partner trust and intimacy as barriers to condom use, particularly among those in longer-term relationships with a single partner.

Peer education may also play an important role in helping men who are more marginalized in society—those who have been victims of stigma, discrimination, or violence—as they are more likely to engage in unprotected sex. A peer education program that emphasizes personal empowerment and responsibility, and offers social support, may help this particularly vulnerable population to adopt HIV/STI protective measures and aid prevention efforts.

The final report of the study—the only study conducted in Kenya on the subject matter that used systematic research methods—has been discussed with and disseminated to officials at both the National HIV/AIDS and STD Control Program and National AIDS Control Council, to help inform government programs. The report was also recently distributed and discussed at a roundtable meeting in Kenya, sponsored by the Urgent Action Fund for Women's Human Rights, where NGOs and stakeholders set an agenda for reaching men who have sex with men with programs and services, as well as at a UNAIDS/International HIV/AIDS Alliance roundtable meeting in Geneva.

References

[1]Office of the United States Global AIDS Coordinator. 2004. "The President's emergency plan for AIDS relief: U.S five-year global HIV/AIDS strategy." Washington DC: Office of the United States Global AIDS Coordinator.

[2]Niang, Cheikh, et al. 2003. "'It's raining stones:' stigma, violence and HIV vulnerability among men who have sex with men in Dakar, Senegal," *Culture, Health and Sexuality* 5:1–14.

[3]Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro. 2004. *Kenya Demographic and Health Survey 2003*. Calverton, Maryland: CBS, MOH, and ORC Macro.

[4]Ibid.

This article was written by Hena Khan, in conjunction with members of the research team, which includes W. Onyango-Ouma of the Institute of African Studies/University of Nairobi, Harriet Burungi of FRONTIERS/Population Council, and Scott Geibel of Horizons/Population Council.

For more information about this study, contact Scott Geibel (sgeibel@pcnairobi.org) or go to www.popcouncil.org/horizons for a final report on this research.

ABCs: Not as Simple as They Sound

Kenya study highlights how adults and youth interpret key messages

It is widely accepted that the "ABC" behaviors—being abstinent or delaying sex until marriage, being faithful to one sexual partner, and consistently using condoms during sex—are key to reducing the sexual transmission of HIV and that there is a need to tailor messages about the ABCs to fit different audiences and cultural contexts. Yet considerable debate surrounds how best to deliver the messages and apply them to prevention efforts. Furthermore, questions remain about how well the terms are actually understood by the various groups they are meant to target. Are they clear or confusing? Seen as useful or irrelevant? Viewed as complementary or contradictory?

Horizons and the IMPACT Project of Family Health International (FHI) collaborated on a study in 2004 to explore how different groups in two communities in Kenya, Naivasha and Molo, perceive ABC terms and behaviors. Self-administered questionnaires were given to groups of youth and adults—working adults at flower farms and in-school youth ages 13–19. Interviewers were available to help respondents, if needed, fill out the questionnaires. Focus group discussions were also held with flower farm workers and in-school youth, as well as with female sex workers and male truck drivers. The study findings highlight attitudes and norms around the ABC behaviors, as well as barriers to and facilitators of the behaviors, and the role of important actors in transmitting messages about them.

Understanding the ABC Terms

Both adults and in-school youth have an almost universal awareness of HIV, and the great majority have heard the ABC terms used in the context of HIV prevention. However, when asked to define the ABC behaviors in open-ended survey questions, many did not have a clear understanding of the terms, and they offered incorrect or partially correct definitions of the terms, or opinions instead of definitions (see Table 1).

Both groups understood the term "abstinence" the best, and generally described it as not having sex. Compared to adults, youth were more likely to supply a correct answer (46 vs. 39 percent). However, among those who answered incorrectly or only partially correct, it was common for both adults and youth to confuse abstinence with "being faithful to one partner" or to indicate the opposite of the definition with responses like "having sex with many people."

When asked specifically about the term "being faithful," it was often misunderstood and confused with other concepts and qualities, such as loyalty to another person or being honest and trustworthy. In this case,

LOUIS APICELLA

Youth from the Sher Agencies Flower Farm School, one of the study sites.

youth were more likely than adults to confuse the term, with only 23 percent answering the question correctly compared to 35 percent of adults.

Only a small proportion of both adult flower farm workers (17 percent) and in-school youth (13 percent) supplied a correct definition of "consistent condom use." Many youth, particularly younger students, answered the question with an opinion on condom use, with some advising their fellow youth not to use them. A large proportion of adult respondents left the answer space blank.

"Respondents had different levels of clarity about the meaning of abstinence, mutual monogamy, and correct condom use, as well as widely disparate views about the behaviors," summarized Dr. Julie Pulerwitz, Research Director for Horizons and the lead author of the study report.

Attitudes Toward the ABC Behaviors

When survey respondents supplied an opinion about the ABCs instead of a definition, they usually cited the advantages and disadvantages of the behaviors. Respondents from both groups perceived abstinence and being faithful as positive and widely supported behaviors, whether or not they correctly defined the behavior. When asked specifically for their opinions, 99 percent of adults and 98 percent of youth reported that being faithful is a "good" idea. These positive views were further emphasized in focus group discussions.

On the other hand, opinions about condoms were often negative, particularly among youth. Many youth perceived condom use as ineffective or inappropriate. When specifically asked whether condoms were good or bad, about a third of in-school youth felt that condom use was a "bad" idea. Further, while many adults reported that condoms prevent HIV and other STIs, more than two thirds of survey respondents indicated that they "may be ineffective" for reasons such as their having holes in them, regularly bursting, or being intentionally damaged.

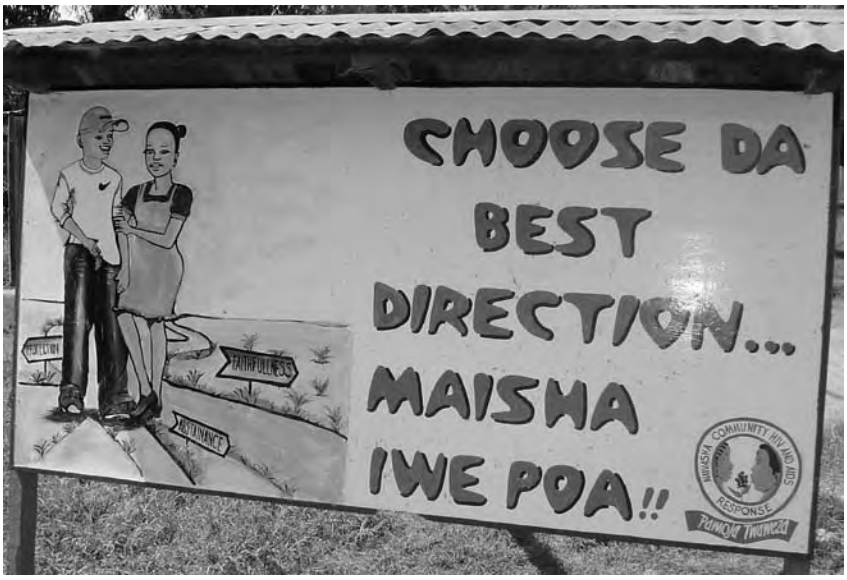
Barriers to the ABC Behaviors

Despite the fact that respondents reported that abstinence and faithfulness were morally appropriate behaviors supported by the greater society, they cited many reasons as to why they were difficult or impossible to implement in actuality. People from all backgrounds—men, women, girls, and boys—mentioned the driving need for sex and an inability to control sexuality. During focus group discussions, participants shared the idea that

> When asked about "being faithful," the term was often misunderstood and confused with other concepts and qualities.

Table 1 How did each group respond when asked to define the ABC terms?

	Abstinence		Be faithful		Consistent condom use	
	Flower farmers n = 538 %	In-school youth n = 1,365 %	Flower farmers n = 537 %	In-school youth n = 1,361 %	Flower farmers n = 537 %	In-school youth n = 1,360 %
Responded correctly	39	46	35	23	17	13
Responded partially correct	4	5	23	18	11	10
Responded incorrectly	13	16	12	41	5	6
Responded with "I don't know"	1	2	0	1	7	13
Response was not a definition	12	21	4	12	18	43
Did not respond	31	11	26	7	43	16



A billboard encourages viewers to choose the best option for them—abstinence, faithfulness, or protection.

FHI/IMPACT

abstaining and being faithful has negative physical repercussions, particularly for men. These potential ailments included back and joint pain, a susceptibility to malaria, and an inability to urinate.

There was also a prevailing sense of fatalism that HIV is so common that there is no way to avoid infection nor any need to engage in risk reduction behaviors such as mutual monogamy. This was combined with ideas on other, often incorrect, ways of acquiring the virus. For example, when asked in a focus group discussion if an individual abstaining would prevent the spread of HIV/AIDS a female flower farm worker responded, "Even if people abstained, sex is not the only way one can get HIV/AIDS. For instance, I can abstain. I have not even married, and I have not had sex with anybody but then I get infected through...injections in hospitals. I will be having the virus and I will die like anyone else."

In addition to their own negative perceptions of condom use, many focus group participants felt that asking a partner to use a condom implied a lack of trust. While both men and women shared this concern, women commonly cited fear of anger or violence should their partner suspect infidelity. Both male and female respondents also stated a reduction in sexual pleasure as an additional barrier to their use.

Another key barrier to condom use that emerged during focus group discussions was the pressure to have unprotected sex, mentioned by female adults and some female youth. Many of these respondents cited the need for transactional sex as a way for women to earn an income or to supplement an existing income and did not feel condom use could be insisted upon in this context. Sex workers reported that transactional sex was their only source of income, and to further complicate matters, male truckers revealed that men pay additional money to encourage sex workers not to use condoms, or even refuse to pay a sex worker unless she agrees not to use them. Rape and forced sex were also commonly mentioned issues affecting women that pose insurmountable barriers to implementing condom use, as well as to being abstinent and faithful.

Youth stated that people providing messages on the need to abstain or be faithful were rarely doing so themselves.

Messages about the ABCs

Although respondents had largely heard of the ABC behaviors and understood that they were intended for HIV prevention, focus group discussions revealed that messages were often confusing or conflicting. Many youth explicitly indicated that they received different information from different sources about how they should behave sexually, predominantly on abstinence and condom use. They also stated that those providing messages on the need to abstain or be faithful were rarely doing so themselves.

Both adults and youth cited receiving conflicting and confusing messages about condom use. Many respondents indicated that they were told that condoms are protective against HIV transmission, but that they are also ineffective. Focus group participants also expressed concerns that condoms actually spread HIV, and reported receiving this information from the radio or other respected sources. As one female youth said, "The radio says they [condoms] have the virus…we are told they

have small holes that can allow the virus to go through."

When asked about the best way to transmit key ABC messages, both adults and youth reported a preference for interpersonal and interactive methods, such as workshops and group discussions. This preference was in spite of the fact that radio and television were reported as the main sources of information. Radio announcements were found to be too general, and respondents reported liking the opportunity to discuss issues in detail and to have their questions answered.

Strengthening ABC Programs

HIV prevention programs that incorporate ABC messages should consider a number of important lessons learned from this study. The findings highlight the need to clarify what is meant by the ABC behaviors, particularly being faithful to a sexual partner in the context of HIV prevention and consistent condom use. Programs focusing on the behaviors should utilize terminology that is locally appropriate and clear. Local perceptions about sexuality and HIV, such as the widespread belief that it is impossible for men to control their sexual behavior and the perception that HIV is impossible to avoid, must also be addressed.

There is potential for programs to build upon the strong support for the AB behaviors indicated by respondents. However, numerous barriers to the AB behaviors, as well as to consistent condom use, highlight the need to combine ABC-related messages with other types of interventions that would allow individuals to practice these behaviors, if they choose to do so.

"These findings indicate that to successfully implement a balanced ABC approach you need to also implement strategies that move beyond building knowledge to take into account important contextual barriers. These include forced sex, women's dependence on transactional sex, and women's frequent inability to negotiate their own sexual behavior," explained Dr. Pulerwitz.

Relevant interventions would focus on reducing gender-based violence, changing perceptions of masculinity and sexuality, and providing microcredit and vocational training to enable women to find alternative sources of income to sex work.

In a balanced ABC program, all components of the paradigm are offered as options, yet targeted to specific audiences. To achieve this balance in Kenya, negative views about and discomfort with condoms must be addressed.

"Many community members did not understand the meaning of consistent condom use, as well as abstinence, and being faithful. Yet, they felt that abstinence and being faithful were socially supported and acceptable behaviors but that condom use was not. FHI is striving to clarify the ABC terms and support community members to practice the ABC behaviors through a balanced and more accurately targeted message mix," explained study investigator Tiffany Lillie of FHI.

She went on to say that HIV prevention programs need to apply the 4Cs to the ABCs. "ABC messages need to be clear, consistent, compelling, and coordinated."

FHI/IMPACT is currently implementing a behavior change intervention in Naivasha. As a first step the project brought together various nongovernmental, civil, and faith-based organizations to discuss the barriers individuals face in adopting the ABC behaviors and to develop a clear and balanced HIV prevention strategy. The ongoing intervention builds on these discussions and delivers ABC messages to different audiences through a variety of methods such as community meetings, discussion groups, street theatre, and billboards.

This article was written by Hena Khan, in conjunction with members of the study team, which includes Julie Pulerwitz of Horizons/PATH, Tiffany Lillie of FHI, Lou Apicella of Horizons/Population Council, Ann McCauley formerly of Horizons/ICRW, Tobey Nelson of Horizons/ICRW, Simon Ochieng and Peter Mwarogo of FHI, and Edward Kunyanga formerly of FHI.

For more information about this study, contact Julie Pulerwitz (jpulerwitz@pcdc.org). A report on this research is forthcoming and will be available at www.popcouncil.org/horizons.

A Targeted Intervention Falls Short

Study in South African mining community highlights importance of understanding sexual networks

JOHANNES VAN DAM

Sex worker peer educators from the Carletonville community.

Population movement has long been identified as a factor in the spread of HIV throughout southern Africa. Today, migrant workers remain a key population to target for HIV prevention efforts not only because of their role in its transmission, but also because of their own vulnerability to the disease as a result of high-risk sexual behavior.[1] In South Africa, mine workers comprise a large number of the migrant workers who fall into this category.

Carletonville, a community in South Africa built on the gold mining economy, depends heavily on migrant work. In 2002, Carletonville and the neighboring township of Khutsong had more than 70,000 men working in 12 gold mining shafts, many from other rural areas of South Africa and neighboring countries. At the time, most mine workers lived in single-sex hostels near the mine compounds and visited their homes only a few times a year. "Hotspots," establishments where beer and sex are sold, surrounded the compounds. The existence of such hotspots, coupled with long absences from home, has been linked to risky sexual behavior among mine workers.[2]

To prevent the spread of HIV within this migrant community, the Horizons Program, in collaboration with the Center for Scientific and Industrial Research, the South African Institute for Medical Research, and the London School of Economics and Political Science, conducted an intervention study in the Carletonville area. A key objective of the study was to assess the impact of an HIV and STI prevention program targeted to mine workers and sex workers on the larger community.

MIP intervention

In 1998, the study partners launched the Mothusimpilo ("working together for health") Intervention Project (MIP) to reduce community prevalence of HIV and other STIs and to sustain those reductions through enhanced prevention programs and STI treatment services. The interventions focused on two populations—female sex workers and male mine workers. It was assumed that focusing on the sexual contacts between sex workers and mine workers, who also have sex with others in the community, would have an impact on the larger community. MIP involved three components: HIV/STI peer education, condom promotion and distribution, and improved management of STIs.

For the peer education program, sex workers were recruited and trained in community work, hygiene, HIV/AIDS, and signs and symptoms of STIs. They provided information to other sex workers, and to a limited extent, the community at large. A similar program was designed for mine workers, who were perceived to be the primary clients of sex workers. Peer educators were also trained in the promotion and distribution of condoms for HIV and STI prevention.

STI management in public and private health facilities was strengthened by training local providers in the syndromic approach and reinforced through implementation of a periodic presumptive treatment (PPT) program for sex workers. Those who enrolled in the program received one gram of azithromycin and two grams of metronidazole once per month to treat most curable STIs present in the community. In addition, participants in the program were taught about preventive strategies, including condom use. The administration of PPT to sex workers was facilitated by the use of two mobile clinics in and around the hotspots.

To study the effects of the intervention, researchers conducted two surveys in 1998 and 2001—randomly sampling mine workers, sex workers, and men and women in the larger community—and a qualitative study investigating sexual networks among sex workers in 2001. Blood and urine samples were collected from the survey respondents to assess the prevalence of syphilis, chlamydia, gonnorrhea, and HIV infection. Participants found to be positive for STIs were referred to the health system for treatment, whereas HIV testing was unlinked and anonymous.

Mixed Results

Knowledge of HIV transmission on the whole was high among all groups at baseline and increased further by 2001. But overall, the findings on behavior change were uneven among the study populations. For example, researchers found that from 1998 to 2001 the percentage of mine workers who reported one or more casual partners in the 12 months prior to each survey decreased (53 to 43 percent). However, among men in the community who reported having casual partners, there was an increase (37 to 45 percent), and among women in the community, there was a significant increase (24 to 41 percent).

Reported consistent condom use with casual partners also showed mixed results. Regular use of condoms increased from 1998 to 2001 among mine workers (19 to 24 percent) and men in the community (28 to 37 percent), and increased slightly among women in the community (22 to 25 percent). But, the proportion of sex workers who reported consistent condom use with casual partners remained unchanged (59 percent).

The results were less encouraging for condom use with regular partners. Very few mine workers reported always using a condom with their regular partner and the percentage of sex workers using condoms consistently with regular partners decreased from 26 to 12 percent. Consistent condom use with regular partners among men and women in the community remained low.

Despite the administration of PPT for curable STIs among sex workers during the intervention period and training of providers for improved STI services, STI prevalence among sex workers, mine workers, and men in the community remained constant or increased slightly. Significant increases were noted among women in the community. Although very high at baseline, all groups, except for men in the community, experienced an increase in HIV prevalence by 2001. For mine workers and women in the community, the increase was statistically significant (see Table 1).

JOHANNES VAN DAM

One of the male hostels in the mining town of Carletonville.

Shortcomings of the Intervention

The intervention had a limited impact for a variety of reasons. Baseline findings indicated that the prevalence of HIV infection was already high in all study groups. This suggests that the HIV epidemic was already generalized and therefore targeting only mine workers and sex workers was not enough to reduce the levels of STIs and HIV in the larger community.

The sexual network analysis, conducted in 2001, revealed that sexual networks in Carletonville linking mine workers, sex workers, and men and women in the community were more complex than originally thought. Mine workers had casual sexual relationships not only with sex workers but also with local women living outside of the targeted hotspots. The women living in these other areas did not self-identify as sex workers and were overlooked in the intervention design, despite the fact that many engaged in transactional sex.

> Targeting only mine workers and sex workers was not enough to reduce STI and HIV prevalence in the community.

Eight months after the start of PPT, more than 900 sex workers had enrolled to receive treatment and monitoring. While rates of STIs decreased significantly among these women, no significant reduction was noted among the sex workers who participated in the cross-sectional surveys. Several reasons likely explain the lack of effect of PPT at the population level: insufficient program coverage of sex workers and other women having transactional sex, lack of STI treatment for the regular partners of sex workers, inconsistent condom use, and a high risk of re-infection.

The peer education program targeted to mine workers also experienced difficulties. Only a handful of mine workers were trained by MIP as peer educators and these few received little ongoing support and follow-up training. They also did not receive paid time off from the mining companies to educate their peers, which resulted in the educational sessions being taught inconsistently. In addition, trade unions did not actively support the MIP program beyond identifying the initial participants to be trained as peer educators.

On the other hand, the peer education program for sex workers was very strong and well-supervised. Since the program began, more than 200 peer educators have been trained, reaching approximately 2,000 sex workers. Despite this achievement, sexual behavior among sex workers changed little. High levels of unemployment; limited job opportunities for women in the community; and difficulty in negotiating condom use due to fears of abandonment, loss of economic support, and physical violence, contributed to the lack of change in sexual behavior among sex workers.

What We Learned

Although the intervention had mixed results, this project nonetheless provides valuable lessons for the implementation of other large-scale HIV/STI interventions, particularly in settings with high HIV and STI prevalence rates.

First, it is important to analyze the sexual networks and the pattern of HIV and STIs that exist in the community prior to the introduction of interventions, in order to understand exactly who to target. The existence of several different sub-populations that play key roles in HIV/STI transmission in the community requires that the intervention address each group's particular needs and constraints.

"Overall, appropriate diagnostic and formative work, and a clear understanding of sexual networks, are extremely important for the tailoring

Table 1 How did the prevalence of HIV and other STIs change among the study populations?

	Sex workers			Mine workers			Men			Women		
	1998 n = 121 %	2001 n = 101 %	p-value	1998 n = 898 %	2001 n = 994 %	p-value	1998 n = 498 %	2001 n = 532 %	p-value	1998 n = 710 %	2001 n = 878 %	p-value
HIV	69	78	0.10	29	36	0.00	22	20	0.26	37	45	0.00
Other STIs												
Syphilis	25	21	0.22	6	4	0.07	6	5	0.29	10	13	0.05
Chlamydia	9	8	0.48	4	5	0.05	5	7	0.17	8	12	0.01
Gonorrhea	16	10	0.14	3	4	0.27	3	4	0.32	7	11	0.01

and thus success of any intervention," said Dr. Johannes van Dam of Horizons/Population Council, one of the study's principal investigators.

Second, to have an appreciable impact on STI prevalence in the community, PPT interventions must have sufficient coverage. PPT can be an effective intervention to reduce STI rates among sex workers and other high-risk individuals, but there may not be a noticeable effect within the general population if enough individuals and their partners do not participate in the program.

Lastly, changing sexual behavior is difficult without an enabling environment. In this intervention, peer education was implemented for sex workers, but it failed to achieve universal condom use among them because little was done to help support women's negotiation of condom use with their male partners. The absence of a sustained peer education program for men in the community and in the mines meant that they were receiving limited information and motivation for behavior change. Therefore, peer education programs for all populations involved in sexual networks need to be comprehensive and coordinated to help create a supportive environment for adopting preventive behaviors.

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This article was written by Sherry Hutchinson in conjunction with members of the study team which includes Johannes van Dam, Lewis Ndhlovu, and Catherine Searle of Horizons/Population Council.

For more information on this study, please contact Lewis Ndhlovu (lndhlovu@pcjoburg.org.za) or go to www.popcouncil.org/horizons for a summary and final report on this research.

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HorizonsReport

The Horizons Report is a biannual newsletter produced by the Horizons Program, which is dedicated to global operations research on HIV/AIDS prevention, care, and support.

Published in December 2005

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ISSN: 1539-5103

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This publication was made possible through support provided by the President's Emergency Plan for AIDS Relief through the Office of HIV/AIDS, U.S. Agency for International Development (USAID), under the terms of HRN-A-00-97-00012-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.